

Application No. 10/001,850

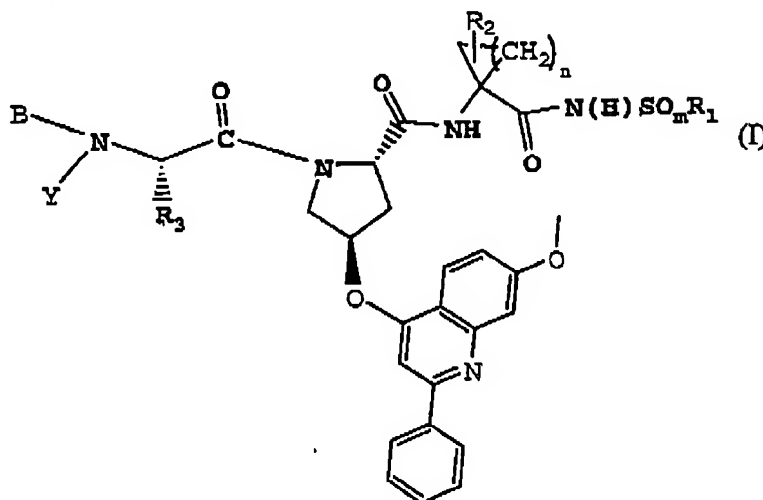
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CLAIM AMENDMENTS

Please amend claims 26 and 32, and add new claim 35 as follows:

Amendments to the Claims:

Claim 1 (Original) A compound having the formula



wherein:

- (a) R₁ is C₁₋₆ alkyl, C₃₋₇ cycloalkyl, or C₄₋₁₀ (alkylcycloalkyl), which are all optionally substituted from one to three times with halo, cyano, nitro, C₁₋₈ alkoxy, amido, amino or phenyl, or R₁ is C₆ or C₁₀ aryl which is optionally substituted from one to three times with halo, cyano, nitro, C₁₋₆ alkyl, C₁₋₈ alkoxy, amido, amino or phenyl;
- (b) m is 1 or 2;
- (c) n is 1 or 2;
- (d) R₂ is C₁₋₆ alkyl, C₂₋₆ alkenyl or C₃₋₇ cycloalkyl, each optionally substituted from one to three times with halogen, or R₂ is H;
- (e) R₃ is C₁₋₆ alkyl optionally substituted with phenyl, C₃₋₁₂ alkenyl, C₃₋₇ cycloalkyl, or C₄₋₁₀ (alkylcycloalkyl), wherein the cycloalkyl or alkylcycloalkyl are optionally substituted with hydroxy, C₁₋₆ alkyl, C₂₋₆ alkenyl; or C₁₋₆ alkoxy or R₃ together with the carbon atom to which it is attached forms a C₃₋₇ cycloalkyl group optionally substituted with C₂₋₈ alkenyl;
- (f) Y is H, phenyl substituted with nitro, pyridyl substituted with nitro, or C₁₋₆ alkyl wherein said alkyl is optionally substituted with cyano, OH or C₃₋₇ cycloalkyl;
- (g) B is H, C₁₋₆ alkyl, R₄-(C=O)-, R₄O(C=O)-, R₄-N(R₅)-C(=O)-, R₄-N(R₅)-C(=S)-, R₄SO₂-, or R₄-N(R₅)-SO₂-;

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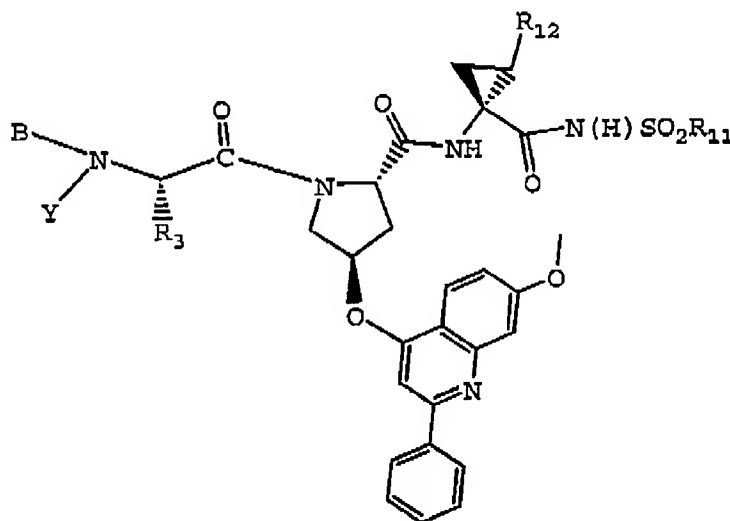
- (h) R_4 is (i) C_{1-10} alkyl optionally substituted with phenyl, carboxyl, C_{1-6} alkanoyl, 1-3 halogen, hydroxy, $-OC(O)C_{1-6}$ alkyl, C_{1-6} alkoxy, amino optionally mono-or-di substituted with C_{1-6} alkyl, amido, or (lower alkyl) amido; or -O-phenyl optionally substituted with halogen or C_{1-6} alkoxy; (ii) C_{3-7} cycloalkyl, C_{3-7} cycloalkoxy, or C_{4-10} alkylcyclo-alkyl, all optionally substituted with hydroxy, carboxyl, (C_{1-6} alkoxy)carbonyl, amino optionally mono- or disubstituted with C_{1-6} alkyl, amido, or (lower alkyl) amido; (iii) amino optionally mono-or-di-substituted with C_{1-6} alkyl; amido; or (lower alkyl)amido; (iv) C_6 or C_{10} aryl or C_{7-16} aralkyl, all optionally substituted with C_{1-6} alkyl, halogen, nitro, hydroxy, amido, (lower alkyl) amido, or amino optionally mono-or-di-substituted with C_{1-6} alkyl; or (v) Het or (lower alkyl)-Het, both optionally substituted with C_{1-6} alkyl, hydroxy, amido, (lower alkyl) amido, or amino optionally mono-or-di-substituted with C_{1-6} alkyl; (vi) bicyclo(1.1.1)pentane; (vii) $-C(O)OC_{1-6}$ alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl; and
- (i) R_5 is H or C_{1-6} alkyl, said C_{1-6} alkyl optionally substituted with 1-3 halogens; or a pharmaceutically acceptable salt, solvate or prodrug thereof.

- Claim 2 (original) A compound of Claim 1 wherein m is 2.
- Claim 3 (original) A compound of Claim 1 wherein n is 1.
- Claim 4 (original) A compound of Claim 1 wherein R_1 is cyclopropyl.
- Claim 5 (original) A compound of Claim 1 wherein R_1 is cyclobutyl.
- Claim 6 (original) A compound of Claim 1 wherein R_1 is optionally substituted phenyl.
- Claim 7 (original) A compound of Claim 1 wherein R_2 is ethyl or vinyl.
- Claim 8 (original) A compound of Claim 1 wherein R_3 is C_{1-6} alkyl.
- Claim 9 (original) A compound of Claim 1 wherein m is 2, n is 1 and R_2 is ethyl.
- Claim 10 (original) A compound of Claim 9 wherein R_1 is cyclopropyl.
- Claim 11 (original) A compound of Claim 9 wherein R_1 is cyclobutyl.

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- Claim 12 (original) A compound of Claim 9 wherein R_1 is optionally substituted phenyl.
- Claim 13 (original) A compound of Claim 1 wherein m is 2, n is 1 and R_2 is vinyl.
- Claim 14 (original) A compound of Claim 13 wherein R_1 is cyclopropyl.
- Claim 15 (original) A compound of Claim 13 wherein R_1 is cyclobutyl.
- Claim 16 (original) A compound of Claim 13 wherein R_1 is optionally substituted phenyl.
- Claim 17 (original) A compound having the formula



wherein:

- (a) R_{11} is C_{1-8} alkyl, C_{3-7} cycloalkyl, or C_{4-10} (alkylcyclo-alkyl), naphthyl, or phenyl wherein said phenyl is optionally substituted from one to three times with halo, cyano, nitro, C_{1-6} alkyl, C_{1-6} alkoxy, amido, or phenyl;
- (b) R_{12} is C_{1-6} alkyl, C_{2-6} alkenyl or H;
- (c) R_3 is C_{1-8} alkyl, C_{3-12} alkenyl, C_{3-7} cycloalkyl, or C_{4-10} (alkylcycloalkyl), wherein the cycloalkyl or alkylcycloalkyl are optionally substituted with hydroxy, C_{1-6} alkyl, C_{1-6} alkenyl, or C_{1-6} alkoxy;
- (d) Y is H or C_{1-6} alkyl wherein said alkyl is optionally substituted with cyano or C_{3-7} cycloalkyl;
- (e) B is H, $R_4-(C=O)-$, $R_4O(C=O)-$, $R_4-N(R_5)-C(=O)-$, $R_4-N(R_5)-C(=S)-$, R_4SO_2- , or $R_4-N(R_5)-SO_2-$;

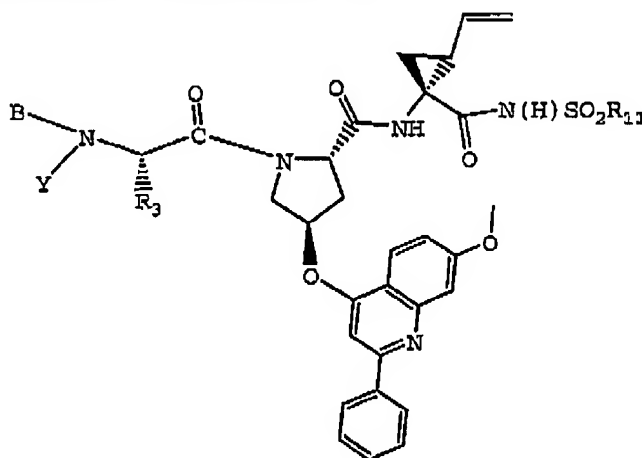
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- (f) R_4 is (i) C_{1-10} alkyl optionally substituted with carboxyl, C_{1-6} alkanoyl, hydroxy, C_{1-6} alkoxy, amino optionally mono-or-di substituted with C_{1-6} alkyl, amido, or (lower alkyl) amido; (ii) C_{3-7} cycloalkyl, C_{3-7} cycloalkoxy, or C_{4-10} alkylcyclo-alkyl, all optionally substituted with hydroxy, carboxyl, (C_{1-6} alkoxy)carbonyl, amino optionally mono- or disubstituted with C_{1-6} alkyl, amido, or (lower alkyl) amido; (iii) amino optionally mono-or-di-substituted with C_{1-6} alkyl; amido; or (lower alkyl)amido; (iv) C_6 or C_{10} aryl or C_{7-16} aralkyl, all optionally substituted with C_{1-6} alkyl, hydroxy, amido, (lower alkyl) amido, or amino optionally mono-or-di-substituted with C_{1-6} alkyl; or (v) Het or (lower alkyl)-Het, both optionally substituted with C_{1-6} alkyl, hydroxy, amido, (lower alkyl) amido, or amino optionally mono-or-di-substituted with C_{1-6} alkyl; and
- (g) R_5 is H or C_{1-6} alkyl,
or a pharmaceutically acceptable salt, solvate or prodrug thereof.

Claim 18 (original) A compound of Claim 17 wherein R_{11} is selected from cyclopropyl, cyclobutyl or optionally substituted phenyl.

Claim 19 (original) A compound having the formula



wherein:

- (a) R_{11} is C_{1-8} alkyl, C_{3-7} cycloalkyl, or C_{4-10} (alkylcyclo-alkyl), naphthyl, or phenyl wherein said phenyl is optionally substituted from one to three times with halo, cyano, nitro, C_{1-6} alkyl, C_{1-6} alkoxy, amido, or phenyl;
- (b) R_3 is C_{1-8} alkyl, C_{3-12} alkenyl, C_{3-7} cycloalkyl, or C_{4-10} (alkylcycloalkyl), wherein the cycloalkyl or alkylcycloalkyl are optionally substituted with hydroxy, C_{1-6} alkyl, C_{1-6} alkenyl, or C_{1-6} alkoxy;

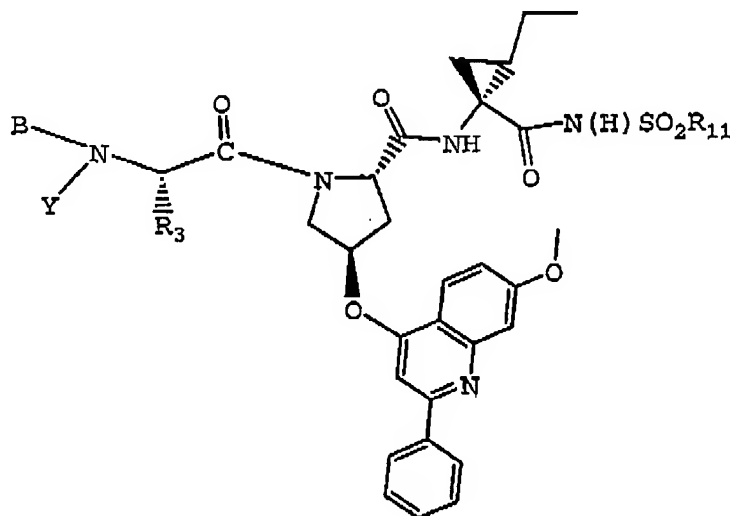
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- (c) Y is H or C₁₋₆ alkyl wherein said alkyl is optionally substituted with cyano or C₃₋₇ cycloalkyl;
- (d) B is H, R₄-(C=O)-, R₄O(C=O)-, R₄-N(R₅)-C(=O)-, R₄-N(R₅)-C(=S)-, R₄SO₂-, or R₄-N(R₅)-SO₂-;
- (e) R₄ is (i) C₁₋₁₀ alkyl optionally substituted with carboxyl, C₁₋₆ alkanoyl, hydroxy, C₁₋₆ alkoxy, amino optionally mono-or-di substituted with C₁₋₆ alkyl, amido, or (lower alkyl) amido; (ii) C₃₋₇ cycloalkyl, C₃₋₇ cycloalkoxy, or C₄₋₁₀ alkylcyclo-alkyl, all optionally substituted with hydroxy, carboxyl, (C₁₋₆ alkoxy)carbonyl, amino optionally mono- or disubstituted with C₁₋₆ alkyl, amido, or (lower alkyl) amido; (iii) amino optionally mono-or-di-substituted with C₁₋₆ alkyl; amido; or (lower alkyl)amido; (iv) C₆ or C₁₀ aryl or C₇₋₁₈ aralkyl, all optionally substituted with C₁₋₆ alkyl, hydroxy, amido, (lower alkyl) amido, or amino optionally mono-or-di-substituted with C₁₋₆ alkyl; or (v) Het or (lower alkyl)-Het, both optionally substituted with C₁₋₆ alkyl, hydroxy, amido, (lower alkyl) amido, or amino optionally mono-or-di-substituted with C₁₋₆ alkyl; and
- (f) R₅ is H or C₁₋₆ alkyl;
- or a pharmaceutically acceptable salt, solvate or prodrug thereof.

Claim 20 (original) A compound of Claim 19 wherein R₁₁ is selected from cyclopropyl, cyclobutyl or optionally substituted phenyl.

Claim 21 (original) A compound having the formula



wherein:

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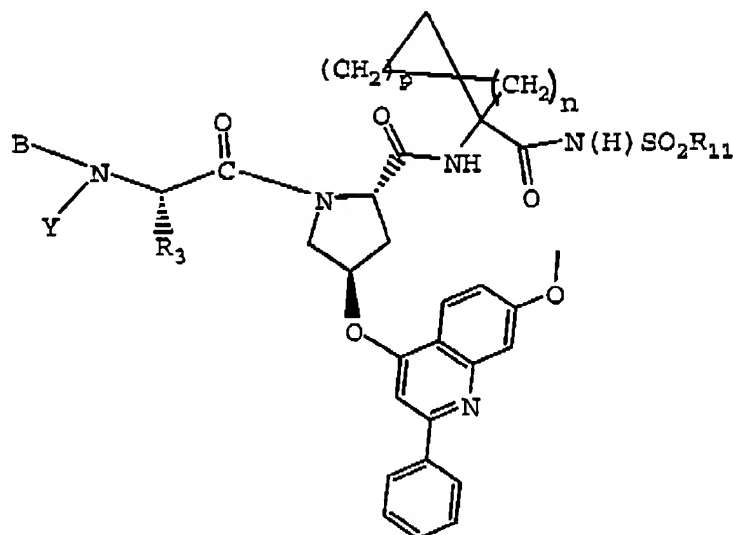
- (a) R_{11} is C_{1-6} alkyl, C_{3-7} cycloalkyl, or C_{4-10} (alkylcyclo-alkyl), naphthyl, or phenyl wherein said phenyl is optionally substituted from one to three times with halo, cyano, nitro, C_{1-6} alkyl, C_{1-6} alkoxy, amido, or phenyl;
- (b) R_3 is C_{1-6} alkyl, C_{3-12} alkenyl, C_{3-7} cycloalkyl, or C_{4-10} (alkylcycloalkyl), wherein the cycloalkyl or alkylcycloalkyl are optionally substituted with hydroxy, C_{1-6} alkyl, C_{1-6} alkenyl, or C_{1-6} alkoxy;
- (c) Y is H or C_{1-6} alkyl wherein said alkyl is optionally substituted with cyano or C_{3-7} cycloalkyl;
- (d) B is H, $R_4-(C=O)-$, $R_4O(C=O)-$, $R_4-N(R_5)-C(=O)-$, $R_4-N(R_5)-C(=S)-$, R_4SO_2- , or $R_4-N(R_5)-SO_2-$;
- (e) R_4 is (i) C_{1-10} alkyl optionally substituted with carboxyl, C_{1-6} alkanoyl, hydroxy, C_{1-6} alkoxy, amino optionally mono-or-di substituted with C_{1-6} alkyl, amido, or (lower alkyl) amido; (ii) C_{3-7} cycloalkyl, C_{3-7} cycloalkoxy, or C_{4-10} alkylcyclo-alkyl, all optionally substituted with hydroxy, carboxyl, (C_{1-6} alkoxy)carbonyl, amino optionally mono- or disubstituted with C_{1-6} alkyl, amido, or (lower alkyl) amido; (iii) amino optionally mono-or-di-substituted with C_{1-6} alkyl; amido; or (lower alkyl)amido; (iv) C_6 or C_{10} aryl or C_{7-16} aralkyl, all optionally substituted with C_{1-6} alkyl, hydroxy, amido, (lower alkyl) amido, or amino optionally mono-or-di-substituted with C_{1-6} alkyl; or (v) Het or (lower alkyl)-Het, both optionally substituted with C_{1-6} alkyl, hydroxy, amido, (lower alkyl) amido, or amino optionally mono-or-di-substituted with C_{1-6} alkyl; and
- (f) R_5 is H or C_{1-6} alkyl;
- or a pharmaceutically acceptable salt, solvate or prodrug thereof.

Claim 22 (original) A compound of Claim 21 wherein R_{11} is selected from cyclopropyl, cyclobutyl or optionally substituted phenyl.

Claim 23 (original) A compound having the formula

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wherein:

- (a) R_{11} is C_{1-6} alkyl, C_{3-7} cycloalkyl, or C_{4-10} (alkylcycloalkyl), naphthyl, or phenyl wherein said phenyl is optionally substituted from one to three times with halo, cyano, nitro, C_{1-6} alkyl, C_{1-6} alkoxy, amido, or phenyl;
- (b) R_3 is C_{1-6} alkyl, C_{3-12} alkenyl, C_{3-7} cycloalkyl, or C_{4-10} (alkylcycloalkyl), wherein the cycloalkyl or alkylcycloalkyl are optionally substituted with hydroxy, C_{1-6} alkyl, C_{1-6} alkenyl, or C_{1-6} alkoxy;
- (c) Y is H or C_{1-6} alkyl wherein said alkyl is optionally substituted with cyano or C_{3-7} cycloalkyl;
- (d) B is H, $R_4-(C=O)-$, $R_4O(C=O)-$, $R_4-N(R_5)-C(=O)-$, $R_4-N(R_5)-C(=S)-$, R_4SO_2- , or $R_4-N(R_5)-SO_2-$;
- (e) R_4 is (i) C_{1-10} alkyl optionally substituted with carboxyl, C_{1-6} alkanoyl, hydroxy, C_{1-6} alkoxy, amino optionally mono-or-di substituted with C_{1-6} alkyl, amido, or (lower alkyl) amido; (ii) C_{3-7} cycloalkyl, C_{3-7} cycloalkoxy, or C_{4-10} alkylcyclo-alkyl, all optionally substituted with hydroxy, carboxyl, (C_{1-6} alkoxy)carbonyl, amino optionally mono- or disubstituted with C_{1-6} alkyl, amido, or (lower alkyl) amido; (iii) amino optionally mono-or-di-substituted with C_{1-6} alkyl; amido; or (lower alkyl)amido; (iv) C_6 or C_{10} aryl or C_{7-16} aralkyl, all optionally substituted with C_{1-6} alkyl, hydroxy, amido, (lower alkyl) amido, or amino optionally mono-or-di-substituted with C_{1-6} alkyl; or (v) Het or (lower alkyl)-Het, both optionally substituted with C_{1-6} alkyl, hydroxy, amido, (lower alkyl) amido, or amino optionally mono-or-di-substituted with C_{1-6} alkyl;
- (f) R_5 is H or C_{1-6} alkyl;

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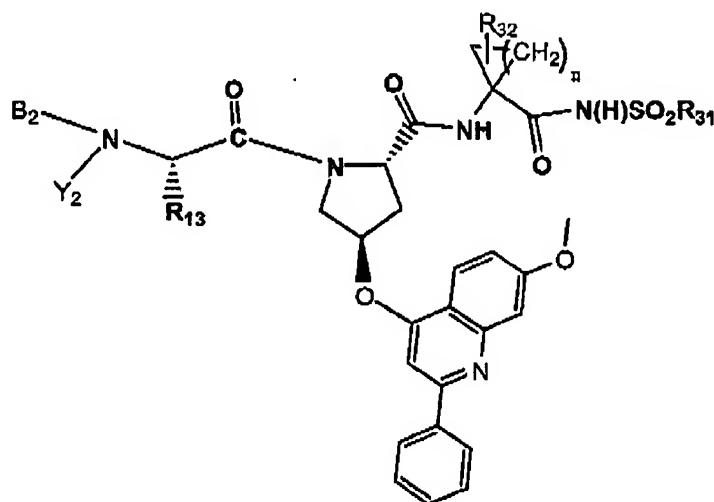
(g) n is 1 or 2; and

(h) p is 1, 2, 3, 4 or 5,

or a pharmaceutically acceptable salt, solvate or prodrug thereof.

Claim 24 (original) A compound of Claim 23 wherein R_{11} is selected from cyclopropyl, cyclobutyl or optionally substituted phenyl.

Claim 25 (original) A compound of having the formula



wherein:

- (a) R_{31} is C_{1-8} alkyl, C_{3-7} cycloalkyl, or C_{4-10} (alkylcycloalkyl), all optionally substituted with hydroxy, halo, C_{1-6} alkoxy, C_{1-6} thioalkyl, amido, amino, (C_{1-6} alkyl)amido, C_6 or C_{10} aryl, C_{7-10} aralkyl, Het, or (C_{1-6} alkyl)-Het, said aryl, arylalkyl or Het being optionally substituted with halo, alkyl or lower alkyl Het;
- (b) n is 1 or 2;
- (c) R_{32} is H, C_{1-6} alkyl, C_{1-3} alkoxy, C_{3-7} cycloalkyl, C_{2-6} alkenyl, or C_{2-6} alkynyl, all optionally substituted with halogen;
- (d) R_{13} is C_{1-8} alkyl, C_{3-12} alkenyl, C_{3-7} cycloalkyl, C_{4-13} cycloalkenyl, or C_{4-10} (alkylcycloalkyl), all optionally substituted with hydroxy, C_{1-6} alkoxy, C_{1-6} thioalkyl, amino, amido, (loweralkyl) amido, C_6 or C_{10} aryl, or C_{7-10} aralkyl;
- (e) Y_2 is H or C_{1-6} alkyl;
- (f) B_2 is H, $R_{14}-(C=O)-$, $R_{14}O(C=O)-$, $R_{14}-N(R_{15})-C(=O)-$, $R_{14}-N(R_{15})-C(=S)-$, $R_{14}SO_2-$, or $R_{14}-N(R_{15})-SO_2-$;

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- (g) R_{14} is (i) C_{1-10} alkyl optionally substituted with carboxyl, C_{1-6} alkanoyl, hydroxy, C_{1-6} alkoxy, amino optionally mono-or-di substituted with C_{1-6} alkyl, amido, or (lower alkyl) amido; (ii) C_{3-7} cycloalkyl, C_{3-7} cycloalkoxy, or C_{4-10} alkylcycloalkyl, all optionally substituted with hydroxy, carboxyl, (C_{1-6} alkoxy)carbonyl, amino optionally mono- or disubstituted with C_{1-6} alkyl, amido, or (lower alkyl) amido; (iii) amino optionally mono-or-di-substituted with C_{1-6} alkyl; amido; or (lower alkyl)amido; (iv) C_6 or C_{10} aryl or C_{7-16} aralkyl, all optionally substituted with C_{1-6} alkyl, hydroxy, amido, (lower alkyl) amido, or amino optionally mono-or-di-substituted with C_{1-6} alkyl; or (v) Het or (lower alkyl)-Het, both optionally substituted with C_{1-6} alkyl, hydroxy, amido, (lower alkyl) amido, or amino optionally mono-or-di-substituted with C_{1-6} alkyl; and
- (h) R_{15} is H or C_{1-6} alkyl.

Claim 26 (currently amended) A salt, solvate or ~~prodrug~~ prodrug of a compound of Claim 25.

Claim 27 (original) A compound of Claim 25 wherein R_{31} is C_{3-6} cycloalkyl, C_{4-10} alkylcycloalkyl, C_{1-6} alkyl CF_3 or CCl_3 .

Claim 28 (original) A compound of Claim 25 wherein B_2 is an acyl derivative of formula $R_{14}-O-(C=O)-$ or a carboxyl of formula $R_{14}-O-(C=O)-$.

Claim 29 (original) A compound of claim 25 wherein R_2 is H, C_{1-3} alkyl, C_{3-6} cycloalkyl, or C_{2-4} alkenyl, all optionally substituted with halo.

Claim 30 (original) A compound of claim 25 wherein R_{31} is C_{1-6} alkyl, C_{3-7} cycloalkyl, or C_{4-10} alkylcycloalkyl, all optionally substituted with hydroxy, C_{1-6} alkoxy, C_{1-6} thioalkyl, acetamido or C_6 or C_{10} aryl.

Claim 31 (previously presented) A compound of claim 25 wherein

B_2 is $(CH_3)_3O-CO-$;

Y_2 is H; n is 1;

R_{31} is methyl, cyclopropyl or $-CF_3$;

R_{32} is ethyl or vinyl; and

R_{13} is t-butyl, i-propyl, s-butyl, i-butyl or cyclohexylmethyl.

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- Claim 32 (currently amended) A pharmaceutical composition, comprising
- (a) a compound of Claim 1-31, or a pharmaceutically acceptable salt, solvate or prodrug thereof; and
 - (b) a pharmaceutically acceptable carrier.

Claim 33 (cancelled).

Claim 34 (cancelled).

Claim 35 (new) A method of inhibiting HCV NS3 protease which comprises administering to a mammal in need of such treatment a therapeutically effective amount a compound of Claim 1-31 or a pharmaceutically acceptable salt, solvate of prodrug thereof.